

**BEFORE THE DIRECTOR OF THE
DEPARTMENT OF PESTICIDE REGULATION
STATE OF CALIFORNIA**

In the Matter of Grimmway Farms

Request for Approval of
Reduced Volatile Organic Compound
Emissions Field Fumigation Methods

DECISION

(Title 3, California Code of Regulations section 6452)

GRIMMWAY FARMS

**Mr. Sean McNally
Vice President
Corporate and Government Affairs
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P.O. Box 81498
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Summary

Grimmway Farms submitted a request to allow chemigation applications of metam-sodium and metam-potassium (methyl isothiocyanate [MITC]-containing pesticides) based on a study previously submitted to the Department of Pesticide Regulation (DPR). The Metam-Sodium Task Force and Amvac Chemical Corporation submitted a study to DPR titled “Field Volatility of MITC After Application of Metam-Sodium at the Edison Road Field Site, Mettler California” dated July 2006. The application was made by chemigation with a 4:00 a.m. start time, which qualifies as a night application. As part of DPR’s efforts to reduce volatile organic compound (VOC) emissions, most night applications of MITC-containing pesticides are prohibited within several ozone nonattainment areas (NAAs) during May–October, under Title 3, California Code of Regulations (3 CCR) section 6450.1(c). However, the regulations also include a provision for DPR’s Director to grant interim approval of fumigation methods that reduce VOC emissions (3 CCR section 6452). DPR has completed its evaluation of the fumigation method described in the study as specified in 3 CCR section 6452. The DPR has determined that with application rate modifications the method meets the standard for approval as an interim method, as described below. Effective August 1, 2008, DPR grants approval for interim use of the metam 4:00 a.m. start chemigation method described in the study in all five ozone NAAs. The method described in the study may be used for three years from the effective date.

Background

VOCs contribute to the formation of ozone, a major air pollutant in several regions of California. California’s State Implementation Plan for the federal Clean Air Act ozone standard includes an

element to track and reduce VOC emissions from pesticides. On January 25, 2008, DPR adopted regulations to control VOC emissions from fumigants during the May–October peak ozone season in five ozone NAAs: Sacramento Metro, San Joaquin Valley, Southeast Desert, South Coast, and Ventura. The regulations include provisions that only allow fumigation methods for which DPR has adequate data to determine the VOC emission rates. However, the regulations include a provision for interim approval of fumigation methods with emissions no greater than the field fumigation methods allowed in the regulations in the respective areas (3 CCR section 6452).

On June 16, 2008, DPR received a verbal request from representatives of Grimmway Farms and other carrot growers to approve an interim method for nighttime chemigation applications using metam-potassium and metam-sodium. DPR received a subsequent written request from Grimmway Farms on July 31, 2008. The fumigation method is critical to carrot and potato farming operations since a label restriction regarding ambient air temperature limits the times of day that the pesticide may be applied in certain regions of California. Between this label restriction and the prohibition of nighttime chemigation, growers in NAAs have a narrow window to treat their acreage.

Regulatory Standards and Considerations

Title 3, CCR section 6452 sets different standards by which to evaluate whether a new fumigation method will be allowed, one for the Sacramento Metro and South Coast ozone NAAs and one for the San Joaquin Valley, Southeast Desert, and Ventura ozone NAAs. Sacramento Metro and South Coast have a less stringent standard because no further VOC reductions from pesticides are needed in these ozone NAAs. Both “low-emission” and “high-emission” methods can be used in these two areas. Only “low-emission” methods are allowed in the San Joaquin Valley, Southeast Desert, and Ventura ozone NAAs during the May–October peak ozone season. The key information is the emission rating (percent of the fumigant applied that is emitted to the air) and the emission rate (emission rating multiplied by the maximum application rate). Either the emission rating or the emission rate can be no greater than the current methods allowed within the ozone NAAs by the regulations. The following table shows the standard for approval of an interim method for MITC-generating pesticides, based on DPR’s current emission estimates.

Ozone NAA	Maximum Allowed MITC Emission Rating (percentage)	Maximum Allowed MITC Emission Rate (pounds/acre)
Sacramento Metro, South Coast	77	140
San Joaquin Valley, Southeast Desert, Ventura	28	51

In assessing whether the new method meets the standard, DPR must assess the scientific data submitted to establish the emission rating, normally consisting of field monitoring data. In evaluating this data, 3 CCR section 6452 requires DPR to consider the following factors:

- whether the information is sufficient to estimate emissions.
- whether the results are valid as indicated by the quality control data.
- whether the conditions studied represent agricultural fields.

Summary and Evaluation of the Submitted Information

The Metam-Sodium Task Force and Amvac Chemical Corporation submitted a study to DPR titled “Field Volatility of MITC After Application of Metam-Sodium at the Edison Road Field Site, Mettler California” dated July 2006. The application was made by chemigation with a 4:00 a.m. start time, which qualifies as a night application. AMVAC Metam 42 (Metam Sodium 42 percent w/w) was applied at a rate of 75.35 gallons/acre (319.5 lbs active ingredient/acres) by sprinkler (chemigation) to a 10.17-acre field. The application was finished at 10:00 a.m. After a 15 minute flushing of the sprinkler lines with water a “water cap” of 0.23 acre inch was applied between 10:15 a.m. and 11:30 a.m. This application method also includes an additional “water cap” of 0.46 acre inch between 6:00 p.m. and 8:30 p.m.

Twenty air samplers were positioned off-site at distances of 30 meters to 150 meters from the field edge. The Quality Control/Quality Assurance results were reviewed and found to be acceptable. A four-day MITC flux profile was developed and total MITC mass loss was estimated using the ISCST model and the back-calculation method in two different ways:

- using all 20 air samplers: 283.1kg MITC mass loss/33.79 percent and 61.1 pounds/acre.
- using only the 12 forecast samplers (samplers expected to be downwind): 292.71kg MITC mass loss/34.93 percent and 63.2 pounds/acre.

Findings

The information provided indicates that the emissions for this fumigation method are approximately 35 percent of the available MITC. Therefore, DPR has assigned the following emission ratings to this method:

- metam-sodium and metam-potassium sprinkler 4:00 a.m. start method: 35 percent.

Low-emission application methods must achieve an emission rating of 28 percent or less. Therefore, this application method cannot be considered a low-emission method based upon the emission rating. However, this method can be considered a low-emission method if the maximum application rate is adjusted to a level that ensures the emission rate (emission rating

multiplied by the maximum application rate) does not exceed 51 pounds of MITC per acre, equivalent to 290 pounds of metam-potassium active ingredient (A.I.) per acre or 260 pounds of metam-sodium A.I. per acre. Table 1 shows the equivalent product application rates.

Conclusions

The 35 percent emission rating and an application rate limit support approval of this fumigation method. Effective August 1, 2008, the metam sprinkler 4:00 a.m. start application method is approved for use in the San Joaquin Valley, Southeast Desert, and Ventura ozone NAAs with the following restrictions during May 1–October 31:

- metam-potassium application rate must not exceed 290 pounds A.I. per acre.
- metam-sodium application rate must not exceed 260 pounds A.I. per acre.
- fumigations must start no earlier than 4 a.m.
- two post-fumigation water treatments as specified in 3 CCR section 6450.1(d)(2) must be applied.
- pesticide use reports must identify these applications using field fumigation method code 1472.

Effective August 1, 2008, the metam sprinkler 4:00 a.m. start application method is approved for use in the Sacramento Metro and South Coast ozone NAAs with the following restrictions during May 1–October 31:

- fumigations must start no earlier than 4:00 a.m.
- two post-fumigation water treatments as specified in 3 CCR section 6450.1(d)(2) must be applied.
- pesticide use reports must identify these applications using field fumigation method code 1472.

The only restriction, other than labeling requirements, outside the May 1–October 31 period is to include field fumigation method code 1472 on pesticide use reports.

DPR grants interim approval of this fumigation method for three years from the effective date.

By: Mary-Ann Warmerdam
Mary-Ann Warmerdam, Director

Date: 08/14/2008

Attachment

Table 1. Maximum product application rates in gallons per acre to meet low emission MITC mass loss criteria of 51 pounds MITC per acre in the San Joaquin Valley, Southeast Desert, and Ventura NAAs during May–October.

Metam Sodium Products					
Company	Product Name	Reg No.	lbs A.I./gal	Conversion factor¹	Maximum application rate (gal/ac)²
AMVAC	AMVAC Metam	5481-420-AA	3.18	0.8163	80
AMVAC	AMVAC Metam 426	5481-423-AA	4.26	1.0935	60
AMVAC	METAM SODIUM	5481-350-ZA	3.18	0.8163	80
AMVAC	VAPAM	5481-466-AA	3.18	0.8163	80
AMVAC	VAPAM HL	5481-468-AA	4.26	1.0935	60
Buchman Laboratory	BUSAN 1020	1448-85-AA	3.2	0.8214	80
Taminco, Inc.	Metam CLR 42%	45728-16	4.25	1.0909	60
Tessenderlo-Kerley, Inc.	SECTAGON 42	61842-6	4.22	1.0832	60
Metam Potassium Products					
Company	Product Name	Reg No.	lbs A.I./gal	Conversion factor	Maximum application rate (gal/ac)
AMVAC	K-PAM HL	5481-483-AA	5.8	1.3154	50
Tessenderlo-Kerley, Inc.	SECTAGON-K54	61842-7-AA	5.8	1.3154	50

$$^1 \text{ conversion factor} = \frac{\text{product lb MS}}{\text{gal}} * \frac{73 \text{ MITC mol.wt.}}{129 \text{ MS mol.wt.}} * \frac{1 \text{ kg}}{2.2046 \text{ lbs}}$$

$$^2 \text{ allowed application rate} = (65.7 \text{ kg MITC/ac}) / (\text{conversion factor})$$